VACGEN

www.vacgen.com

Factory Capabilities

UHV Chamber Manufacturing

Introduction

VACGEN has been manufacturing UHV systems for 50 years. Our large production facility means that we can now offer an even better service to our customers.

VACGEN has the capability to supply UHV vacuum chambers of any complexity in a range of materials including stainless steel and mu-metal. Other materials such as aluminum, aluminum alloys and nickel-based superalloys can be used where requirements demand.

We offer comprehensive support during the purchasing process, helping the customer design a chamber to meet their application requirements and providing advice regarding the specification of the chamber.

VACGEN offers the additional service of chamber design and port clash detection. A 3-Dimensional CAD model of your chamber can be produced to aid the visualisation of the end product.

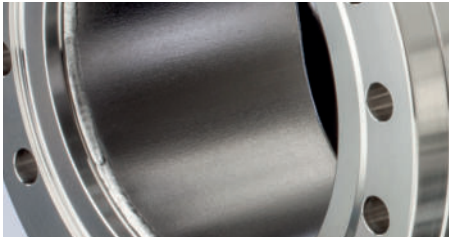
The result of the 3-D modeling process is a set of manufacturing drawings that can ensure the chamber can be effectively manufactured to meet your needs.

We can provide a complete service to meet customers needs when procuring an ultra high vacuum chamber. Experienced technical staff are on hand to manage your chamber project through manufacture,

providing information and support, ensuring that the project's build targets are met.

As a result, VACGEN provide unrivaled value for money by supplying fabrications that fulfill your requirements first time.

Our technical staff are happy to advise you on all UHV chamber manufacturing matters.



Chamber Manufacturing

Chamber Design

We can offer two types of service for your UHV chamber design. First we offer a configurable range of chambers, comprised of standard skeletons or we can offer a bespoke design for manufacture where the customer is entirely in charge.

Configured Chambers

A standardised range of configurable UHV chambers have been designed for your convenience. This configurable range of products, including skeletons, tubes, flanges and gaskets will make designing your chamber a simplistic task and will ensure the costs and lead time of your chamber design are kept within your time frames and your budget. Lead times can be as low as 6 weeks with the configurable range.

Design for Manufacture

If you have an existing design or a conceptual drawings, we can offer a DfM service to produce your vessel in an efficient, accurate and cost effective way. Due to our vast portfolio of bespoke system projects, we can offer you a dedicated team to assist you in the design and production of your custom chamber requirements. Our stringent UHV in-house manufacturing and testing processes ensure high quality production -

Tolerances

- Port Length, General ±1mm, Analyser Port Only ±0.5mm
- Phi & Theta Angles ±0.5°
- General Tolerance R2.0mm

Material (Body & Port Tubes)

- Stainless Steel 316L & 304L
- Nickel Based Super Alloy

UHV Cleaned

- Leak Rate - $2x10^{-10}$ mbar ls^{-1}

ISO 9001:2015 Quality System

UKAS PRODUCT CERTIFICATION

bsi. ISO 9001:2015 Quality Management

Chamber Manufacturing and Processing

We supply ultra high vacuum chambers manufactured to your specific requirements. You will be assigned a project engineer who will oversee your build from design, through engineering and completion, to delivery.

UHV Chamber Applications

- Surface Analysis
- Preperation
- Radial Telescopic Transfer Arm (RTTA)
- Transfer
- Load Lock

Metal Joining Technologies Include:

- TIG Welding
- Brazing
- Electro Beam Welding
- Coded Welding. BSEN ISO9606 (ASME IX)

Metal Joining Technologies Include:

- Full Dimensional Inspection using Metrology Arm
- Helium Leak Checking
- Vacuum Bake up to 450°C
- RGA Scan

Surface Treatment Capabilities Include:

- Satin Polished
- Bead Blasting
- Electro-Polishing

Preperation Chamber
Electro Polished Finish

Chamber Manufacturing

Specifications

Lead Times and Materials

Flow Line : Repeating / Configured Chambers
Based on Standard Skeletons
Maximum Chamber Size: (W)600mm x (D)600mm x (H)700mm
Maximum Mass: 125kg

Lead Time: Mu Metal 7 weeks
Lead Time: Stainless Steel 6 weeks

Bespoke Chambers
Maximum Chamber Size: (W)700mm x (D)700mm x (H)1000mm
Maximum Mass: 500kg
Material: Nickel Based Super Alloy, Stainless Steel 304L, 316L, Alloy 6082-T6

Manufacturing Capabilities Include:

- 5 axis CNC milling
- Turning and Boring
- Tapping and Threading
- 3-D CAD and CAM
- Milling, Drilling and Reaming

Optional RGA Analysis

Maximum Chamber Size: 700mm x 700mm x 1000mm
Maximum Mass: 300kg
Maximum Temperature: 250°c

Helping you make the next leap forward

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